EPA Region 4 Comments
on the
Louisville Metro
Strategic Toxic Air Reduction Draft Regulations
Dated September 16, 2004

General

EPA Region 4 is impressed with the regulations that the Louisville Metro Air Pollution Control District has proposed. They place Louisville in the forefront of communities that are addressing air toxics issues. We find this set of draft regulations to be a forward-looking approach, and expect that they will be favorably received by the community. The regulations are complex, and in order to make them more easily understandable, we suggest a preamble that describes the flow, intent, and rationale of the regulations and the STAR program.

We suggest the draft regulations included a table of contents. In addition we suggest the regulations follow a linear progression through relevant topics with minimal reliance on references to other documents. Including the relevant material from other sources in the regulation itself, or if references are unavoidable, paraphrasing the relevant material from those references in the text of these regulations, would make them more user friendly and more easily understood.

Regulation 1.06

§3.1.1 Should this provision include the year for which the first of these reports will be required?

§3.1.2 Should this provision include the year for which the first of these reports will be required?

§3.4 Should this provision require reporting of perchloroethylene use in units of gallons?

Regulation 1.07

§1.2 We suggest the term *excess emissions* be included in Regulation 1.02, Definitions. The wording of the last sentence in this section is nebulous, calling for reporting if there is an "... appreciable increase...above the routine level of emissions." This could lead to disputes. A related question is what would constitute a "routine level of emissions" from startup, shutdown, and malfunction operations.

§3.1 This provision seems to require owners to notify the District prior to expected excess emissions during planned activities. Is the intent to require owners to notify the District when they intend to violate the regulations?

Regulation 1.20

§3.1 Should “if appropriate” (lines 32 and 33) be better defined?

§3.4 The provision states that the owner of a facility may periodically revise the Malfunction Prevention program as necessary. When would it be necessary, and is this expected to be a requirement rather than a recommendation? If it is a requirement, then the term *may* should be made more definite.

Regulation 1.21

The District may wish to encourage some procedures that are used at various Rubbertown facilities to quickly find and repair equipment leaks for HAPs. At a number of facilities there are area monitors inside reactor buildings. Noveon, for example, has a gas chromatograph in its latex reactor building set up to monitor for vinyl chloride. The instrument cycles through approximately 15 monitor locations in about 1/2 hour. Elevated vinyl chloride readings are discovered on a fairly regular basis (several/month). Some events are related to equipment leaks which are tracked down and fixed. There are also LDAR requirements for the equipment in this building, but there has never been a leak reported in this building through the LDAR provisions. Leaks are being addressed far more quickly because of the gas chromatograph sampling. Any leak found from equipment subject to LDAR regulations, whether through regular monitoring, gas chromatograph, visual, etc. should be reported as a leak and tracked, repaired, remonitored, etc. as required by the regulation. The leaks would also count in the LDAR leak rate calculations.

§1.1.1 By definition, applicability of the enhanced LDAR program is based on process units that use raw materials to manufacture an intended product. In this section, the rule also exempts Dry Cleaning Facilities that are subject to 40 CFR 63 Subpart M from applicability. Since dry cleaners don't use raw materials to manufacture a product and would therefore, by definition, not be subject to the rule, the purpose of the exemption in §1.1.1 is not clear. It is also not clear why other source categories are not identified for exemption such as sterilizers and degreasers (Subpart O and T)?

It should be noted that sources subject to LDAR programs pursuant to regulations in 40 CFR Part 60, 61, or 63 must remain in continuous compliance with all of the specific requirements in these rules, since they will remain the federally enforceable LDAR requirements.

§5 This section contains a number of specific requirements by reference to other organizations’ standards or codes (e.g., American National Standards Institute, American Petroleum Institute, American Society of Mechanical Engineers). Who will inspect the facilities and enforce these standards?

Regulation 3.01

§8 Note that this provision refers to Regulation 3.04, which is being repealed and incorporated into this regulation.

Regulation 5.01

Necessity and Function (lines 10-12)
This item states that this regulation establishes the general provisions for toxic air contaminants and the federal requirements for hazardous air pollutants. The item should be reworded so that it does not state that it is establishing federal requirements.

§1.1.1 We suggest changing the acronym BACc to BmACc to avoid confusion with other acronyms in thee field (e.g., Bioaccumulation Concentration, Biologically Active Carbon, and Best Available Control).

§1.1.2 We suggest changing the acronym BACnc to BmACnc to avoid confusion with other EPA acronyms.

§1.6 Defines exempt sources to include gas stations, solvent metal cleaners, commercial motor vehicle refinishers, and dry cleaners. It would be helpful to explain the rationale for exempting these sources, and refer the reader to other regulations that would apply to them.

§1.6.1 This item refers us to Regulation 6.4, which applies to (§1.1) gas stations with throughput of >10,000 gallons/month and does not apply to (§1.2) small independent business marketers dispensing <25,000 gallons/month. These two criteria seem to leave room for confusion.

§2 An original section on emissions testing and monitoring under 40CFR61 was deleted. The federal rules will continue to apply. Has this section been placed somewhere else in the regulations?

§3 This section states that the owner of a facility will not allow any process or equipment to emit a TAC in a quantity or duration that could be harmful to the health and welfare of humans. For some chemicals, this wording could in theory prohibit any releases. Is the current wording intended to apply inside the fenceline or only beyond the fenceline? If inside the fenceline, it may supplement worker protections.

§4.2 This is another reference to exempting several area source types from these rules. Are these source types covered in another Louisville rule?

Regulation 5.11

§2 Although this regulation is titled *Standards of Performance for Existing Processes and*

Process Equipment Emitting Toxic Air Pollutants, §2 states that the regulation applies to processes and equipment that were in existence prior to November 1986. Some processes could have come on line between 1986 and the present. This could be confusing to readers. The reference to KAR 63:021 leads to a brief description of an air toxics control program, and further refers the reader to several other citations. Perhaps a narrative in the Louisville regulation would help to make this sequence of references more understandable for those who wish to learn the provisions of the new regulations.

§6 This section refers to *adjusted significant levels of individual pollutants*. This term should be defined

Regulation 5.12

§1 The first line states that this regulation, or the Kentucky regulation that is incorporated by reference, applies to new or modified processes. The last section of this regulation states that these provisions will apply until superceded by new provisions in Regulation 5.21. It is not clear how this regulation dovetails with Regulation 5.21 §2.8.2 which provides environmental acceptability standards for equipment that may emit TAC's. Do the goals and standards in Regulation 5.21 apply to chemicals that are referenced in KAR 63:022 but that are not one of the TAC's listed in the new Louisville regulations?

§2 As with Regulation 5.11, the applicability of this regulation is not clear. Although the title of this regulation is *Standards of Performance for New or Modified Processes or Process Equipment Emitting Toxic Air Pollutants*, §2 states that the rule applies to emissions from new or modified processes or equipment that were constructed or modified after November 1986, and refers the reader to the Kentucky Code. The Kentucky code cited again refers the reader to other citations. Again, a narrative might help the reader understand the Louisville and Kentucky regulations.

Regulation 5.20

Note that this Regulation cites some URL web addresses. Since these addresses tend to change over time, some provision should be made for this likelihood, so that the intent of the regulation is not compromised because of a missing web link. We also suggest the document use a star "$_*$ " to signify multiplication rather than the arrow symbol that typically indicates a vector pointing into the page.

§2.1.1 This section states that a TAC will be determined to be a carcinogen if a unit risk estimate or a related concentration for that chemical is included in the sources listed in §3.3. Note that §3.3.4 does not list concentrations or risk estimates - it lists methods for deriving unit risk estimates and benchmark ambient concentrations.

§3.3.4 This section lists 5 alternatives for deriving unit risk estimates and benchmark ambient concentrations. A hierarchical order for using these approaches would help to minimize uncertainty.

§4.1 References to RfC's and IRIS in this section note that the units for the BAC_{NC} are ug/m^3. It should be noted that the units used in IRIS are mg/m^3.

§4.5 The term *ceiling OEL* should be defined.

Regulation 5.21

Note that the wording of this rule often states that the allowed emissions shall not exceed the ambient levels of environmental acceptability. The emissions do not exceed the environmental acceptability levels; the ambient concentrations do. The two metrics have different units. We also suggest the document use standard scientific notation (i.e., 1E-6).

§1.3 This section refers the reader to Regulation 5.01, §1.10. There is no §1.10 in that regulation.

§2 This section refers to goals and standards. They should be defined in the rule so that difference between the two is clear.

The six equations in this section each define the Environmental Acceptability Level (EAL) as a dependent variable, the quotient of an ambient concentration and a benchmark ambient concentration. The EAL is not really the result of this calculation. The EAL is the goal or standard that has been established through the regulations. These equations result in calculated values that will subsequently be used in comparisons with the EALs.

The value of this section would be enhanced if the rationale for the goals and standards were presented. In addition, toxicity values that involve two significant digits may in some cases, stretch the capabilities of the models and the unit risk values.

§2.3.2 This item notes factors that the District may consider in deciding whether to allow a modification of the Environmental Acceptability Goals. It should also discuss the types of rationale that would be considered adequate justification by the District to consider such modifications.

§2.4.1 This item states that the goals in §2.5.1 apply to *all* existing processes and process equipment. Is this a misstatement? §2.5.1 and footnote 2 (page 5.21-2) state that 2.5.1 applies to risk from an individual TAC from an *individual* process.

§2.8 If the intent of this section is to limit risks from all permitted stationary sources, then the wording of this section might be better, "The EA standards for toxic air contaminants applicable to all permitted stationary sources *collectively*..."

§3.1 This item says that for permitted sources, allowed emissions from all processes must comply with the EA levels in §2.5.1. However, §2.5.1 refers to individual processes. Additionally, one could say that *allowed* emissions comply with §2.5.1 by definition.

Perhaps the wording should say that all emissions must comply...

§3.2 This section refers to §3.1, 3.4, and 3.5 of either Regulation 1.06 or Regulation 5.21. The wording should be changed to clarify the reference to the regulation in line 221.

§3.3 This section states that if the allowed emissions (or concentrations that result) exceed the goals, but the actual emissions do not, the facility may request that their permit be revised to reduce the allowable emissions. What benefit is there for the facility to request such a change?

§3.8 This section says that the Board may require additional reductions from stationary sources (not necessarily permitted sources) if the ambient environmental acceptability standards are exceeded. The process by which the Board would decide which sources must reduce their emissions and by how much should be discussed here.

§3.9 This section references an alternative to some provisions. To what alternative does this refer?

§3.10 This item gives the Board the authority to require additional emission reductions if synergistic or additive effects might be involved. Note that additive effects are already considered for carcinogens through the goals set in §2.8.2. Why is a target organ specific hazard index limit not considered for multiple noncarcinogens in §2.8 of Regulation 5.21?

§3.13 This item gives the District the authority to require emission reductions if the District determines that the ambient concentration resulting from a stationary source (not necessarily a permitted source) exceeds the environmental acceptability standards. This seems to duplicate part of the intent of §3.8. What process will be used to determine which sources would be required to reduce emissions by how much?

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If the maximum concentrations in equations 1-6 are based on modeling by the individual facilities, how will one facility have access to the results of the other facilities' efforts in order to determine that the standards in §2.8.1 and 2.8.2 are met? A facility would likely want to be certain about the additional level of control that will be required prior to developing an emission reduction plan. If they have access only to their own modeling, there will remain some question concerning the cumulative impact of several facilities until a comprehensive modeling of the community has been completed.

Is there a compliance schedule for TAC's that are not Category 1 or 1A?

Regulation 5.22

§1.2 This section states that the average emission rate may be used to determine the maximum ambient concentration for intermittent emissions if the average rate is not less than 10%

of the maximum hourly rate. What is the basis for this 10% cut-off level? If the intermittent emissions are frequent (e.g., more than 50% of the averaging period), this 10% level may not be appropriate.

§1.3 This section provides a general description of the available options (4 Tiers) for determining the maximum ambient concentration of a toxic air contaminant. While the intent of Tiers 1 and 2 is to provide a simplified procedure that does not require running an air dispersion model, the procedures are not clearly presented. The comments below address issues that should be clarified in Tiers 1 and 2. If the procedures for Tiers 1 and 2 can't be made more clear, a possible alternative is to remove Tiers 1 and 2 and be left with two options - Tiers 3 and 4. Tier 3, which consists of running either SCREEN3 or TSCREEN should not take an overly burdensome amount of effort for permit applicants. These models are simple to use and were designed to be used by people without the need for any formal air modeling training. While more source specific information is required for the Tier 3 option, it is not much more than is required for Tier 2. Also, Tier 1 appears to be very conservative and may not be useful in many situations.

§1.3.2 This section states that the allowed hourly emission rate is divided by the appropriate annual factor from Table 2 to give the maximum ambient concentration. Will every Toxic Air Contaminant (TAC) have an "allowed hourly emission rate?" It appears that the allowed emission rate is based on 401 KAR 63:022, which indicates that the averaging period for the allowable emission rate is variable and based on the Threshold Ambient Limit (TAL) provided in Appendix B of 401 KAR 63:022 (e.g., 1-hour or 8-hour). It is suggested that the word "hourly" be removed from this Section. This issue is also discussed further below.

§2.1 Table 1 provides simple factors for determining the maximum ambient concentration. Section 2.1 states that "If Table 1 contains two factors for a benchmark ambient concentration averaging time, then the factor that results in the greater maximum concentration shall be used." One entry is provided in Table 1 for each of the four averaging periods (annual, 24-hour, 8-hour, and 1-hour) and additional entries are provided for each BAC averaging time for 1-hour Factors (the last column). It is unclear in what situations these additional 1-hour factors (those that correspond to the annual, 24-hour, and 8-hour BAC averaging times) would be applicable. Do these additional 1-hour entries apply if a contaminant is a carcinogen (annual average BAC) and a non-carcinogen (1-hour, 8-hour, or 24-hour average BAC)? If this is the intent, shouldn't there be additional entries in the 24-hour and 8-hour columns for the annual average BAC row, since a contaminant could have a 24-hour or 8-hour average BAC instead of a 1-hour average BAC? The procedures for implementing the factors in this table need to be clarified.

§2.2 A detailed description of the methodology that was used to develop the factors in Table 1 is needed to be able to adequately review the appropriateness of this "simple factor" procedure. Were these factors developed by running SCREEN3 in a conservative mode? The methodology does not need to be provided in the regulation, but it should be

provided in supporting documentation.

§2.2 How are the "allowed emission" rates determined? If these "allowed emissions" are calculated from 401 KAR 63:022, it does not appear that there are any annual or 24-hour averaging times (only 8-hour and 1-hour averages are provided in 401 KAR 63:022). The basis for the "allowed emission" entries should be clarified.

§3.2 We suggest that the following text be added to the end of the last sentence: "... the height of the influential building, ***as determined in Section 3.7.2.***"

§3.5.1-3.5.3
How were these adjustment factors developed? The methodology used to develop these factors should be provided in supporting documentation so it can be reviewed.

§3.6 It appears a typo was made in the second sentence which refers to the intermittent emission provision in "section 1.3." The correct section reference is "section 1.2."

§3.6 It is suggested that "Allowed 1-hour emission" in Equation 5 be replaced with "Allowed emission." This is same issue that is discussed above.

§3.7.2 This section contains the procedure for determining the height of the influential building. The procedure appears to be a simplified version of EPA's Good Engineering Practice (GEP) stack height procedure contained in EPA's "Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations), EPA-45-/4-80-023R." The simplified procedure presented in this section does not account for the fact that a short, wide building may have a greater impact on dispersion than a tall, narrow building. Information should be provided which supports that this simplified procedure provides a conservative estimate of maximum ambient concentration when used in the Tier 2 analysis contained in Section 3 of the Draft Regulations.

§3.7.2 The last sentence states: "If the stack is not attached to a building, then a building height of 40% of the stack height shall be assumed." The use of the terms "not attached to a building" are not clear. It appears that this sentence is referring to the case when there are no influential buildings near the stack (none within 5 times height). This should be clarified. Also, the basis for the 40% of stack height value should be provided in supporting documentation for the regulation.

§3.8 (mis-labeled as Section 3.5 on Page 5.22-5)
Table 2 provides the Annual Factors to be used with Equation 5. A detailed description of the methodology that was used to develop the factors in Table 5 is needed to be able to adequately review the appropriateness of these "Annual Factors." Were these factors developed by running SCREEN3 in a conservative mode? The methodology does not need to be provided in the regulation, but it should be provided in supporting documentation so that complete review may be conducted.

§4.1 SCREEN3 and TSCREEN are appropriate screening models to use for determining the maximum ambient concentration. While these are both "screening" models that provide conservative estimates of the maximum ambient concentration, it is important to provide some guidance about the model options and inputs that are used to run the models. It is suggested that a condition be added to Section 4.1 stating that if SCREEN3 is used, it is run in the "regulatory default mode" which is described in Section 1.9 of the SCREEN3 User's Guide (EPA-454/B-95-004) available on EPA's SCRAM website (www.epa.gov/scram001). TSCREEN does not have a "regulatory default mode," so it is suggested that if an applicant wishes to use TSCREEN, the model inputs and options be submitted to the District for approval prior to running the model. Pre-approval of model inputs and options would also be a good idea for running SCREEN3, but not as critical. Also, it is important to clarify whether the maximum ambient concentration predicted by SCREEN3 or TSCREEN must occur outside the facility fence-line or is it the absolute maximum value predicted by the model, regardless of whether it is inside or outside the fence-line.

§4.2 This section states that the resulting maximum concentration from SCREEN3 or TSCREEN is in units of $\mu g/m^3$ for a 1-hour averaging time. This is true for SCREEN3, but is not always true for TSCREEN. The default output from TSCREEN is a 1-hour average, but it has options for longer term average outputs (3-hour, 8-hour, 24-hour, annual). This section should clarify whether these longer averaging time outputs from TSCREEN are acceptable for use.

§4.2 This section states that if the benchmark ambient concentration (BAC) for a specific toxic air contaminant has an averaging time other than 1-hour, then the factors provided in this section should be used to adjust the SCREEN3 or TSCREEN maximum ambient concentrations to the appropriate averaging time. How were these adjustment factors derived? They are different than the adjustment factors provided in Section 4.2 of EPA's guidance document titled: "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised, EPA-454/R-92-019," which have been historically used by EPA when adjusting SCREEN3 output to longer-term averaging periods. The different adjustment factors may be appropriate, but their technical basis should be provided in supporting documentation so their appropriateness can be determined.

§5.1 This section provides the option of using EPA's Industrial Source Complex (ISC3) model or other appropriate Appendix A model. These are appropriate models. However, there may be situations that other Non-Appendix A (Appendix B or other) models may be appropriate. It is suggested that these other appropriate model options not be excluded from use. However if a Non-Appendix A model is used, the applicant should receive prior approval from the District for its use. Also, it is suggested that a "modeling protocol" or some type of documentation containing model options and inputs be provided to the District prior to conducting any modeling under this Tier 4 option. These more complex models have many options that should be discussed prior to running the models. Also, as noted above, we suggest that if the ISCST3 model is chosen, that it be run with the "regulatory default options," which are described in Section 1.2.4.1 of the

"User's Guide for the Industrial Source Complex (ISC3) Dispersion Models, Volume 1, EPA-454/B-95-003a."